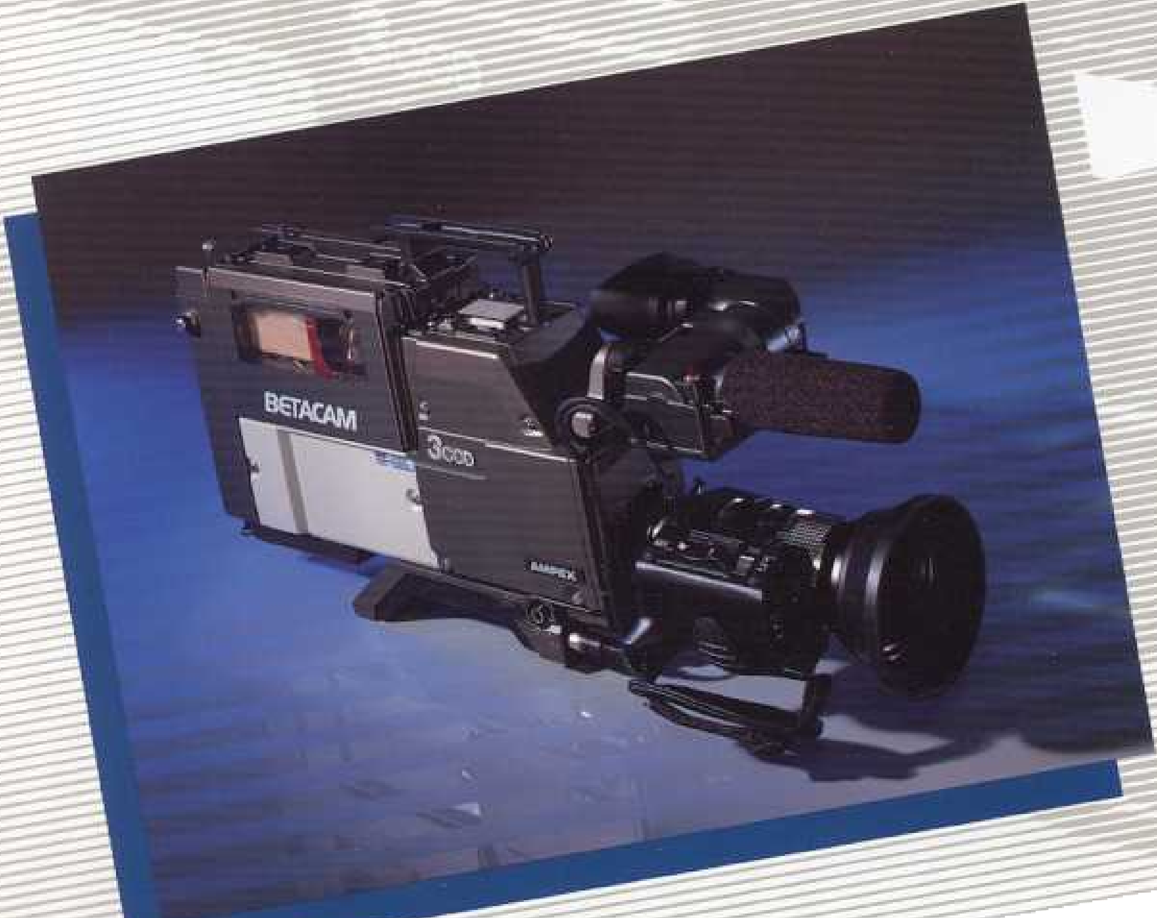
AMPEX

CVR105

CAMCORDER

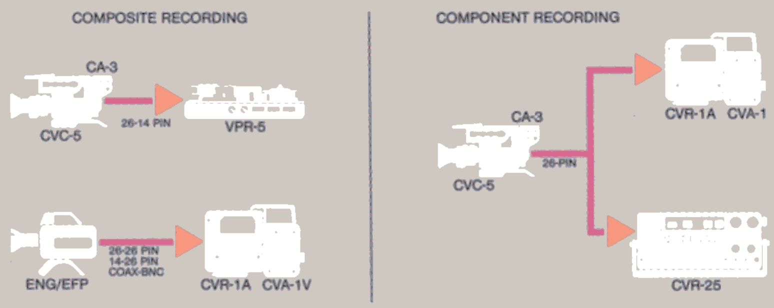


BETACAM

AMPEX

Camcorder

The Ampex Betacam CVR-105 camcorder system couples the high quality CVC-5 CCD chip camera with the CVR-1A recorder to provide the ultimate in reliability and mobility. The CVR-105 is perfect for ENG applications with its compact, lightweight construction and simple operation. State-of-the-art CCD technology ensures excellent picture quality and reliable performance in the most difficult operating conditions.



CVR105

TYPICAL SYSTEM CONFIGURATIONS

CVR105

The Ampex Betacam CVC-5 is a 3-chip CCD camera with the durability and high performance broadcasters look for in an ENG camera. CCD technology results in many advantages not found in conventional tube cameras. Lag, image burn-in, microphonic noise and magnetic field interference problems are eliminated in the CVC-5.

CCD technology also eliminates the need for registration adjustment, thus simplifying the operation of the CVC-5. CCDs are also credited with the compact, lightweight construction and minimal power consumption of the CVC-5.

FEATURES

HIGH RESOLUTION

Advanced CCD technology results in a high resolution picture element of 510 (h) x 492 (v) NTSC and 500 (h) x 582 (v) PAL.

HIGH SENSITIVITY

The CCD imager results in a high sensitivity of F5.6 NTSC or F5.0 PAL at 2000 lux.

CCD IMAGE SENSOR

Since the photoconductive layer associated with conventional tube cameras is unnecessary with CCD technology, lag and image burn-in problems are eliminated in the CVC-5. The CCD image sensor makes the camera shock resistant and durable in conditions considered too hostile for a tube camera.

Since the CCD image sensor is designed with anti-magnetic properties and does not use the electric deflection/focusing method, it is not affected by magnetic or electrical interference.

CCD image geometry eliminates the need for registration, and results in a specification of 0.05% registration error in all zones.

COMPACT AND EFFICIENT

CCD chip circuitry on high density boards results in a compact package, weighing only 7 lb. 1 oz. Power consumption of 10.5W is only half that of conventional tube cameras.

DYNAMIC CONTRAST CONTROL

In a high contrast environment, a sharp picture can be achieved by compressing the high light signal with the switchable Dynamic Contrast Control. This feature extends the dynamic range by 600% NTSC or 500% PAL.

EASE OF OPERATION

Automatic iris control is accomplished by using a 12-pin connector for lens control. Automatic white/black balance is built-in. A dual white balance memory for each 4-position filter is provided, and the color temperature memorized during white balance adjustment is displayed in the viewfinder.

The viewfinder indicates the following functions: record status, filter position, audio level and control (Ch. 1), video level, gain, and white/black balance.

BUILT-IN CONVENIENCES

Other features found in the CVC-5 are linear matrix, 2H image enhancement, shading compensation for lens extender, microphone, and 1.5” viewfinder with a horizontal slide mechanism.

INTERFACE ADAPTOR

Installation of the CA-3 Camera Adaptor allows the CVC-5 to be operated in a stand-alone portable configuration with either component or composite video output. Remote control of a VTR is accomplished using a 26-pin interconnect cable.

CVR-1A

The Ampex Betacam CVR-1A portable recorder is compact, lightweight (7.5 lbs.), and rugged. The CVR-1A can be configured as an integral part of a camcorder or can be operated as an independent recording VTR using an optional video adaptor. The CVA-1 component/composite input adaptor allows the recorder to operate with any ENG/EFP camera.

FEATURES

COMPACT AND LIGHTWEIGHT

The highly efficient Betacam recording format, combined with the compact, high-density packaging and a magnesium diecast frame result in a system that is lightweight, portable and durable.

SUPERIOR BETACAM PICTURE QUALITY

The Betacam recording system employs the Compressed Time Division Multiplex recording system (CTDM) for excellent picture quality and signal-to-noise ratio with no crosstalk between chrominance components.

BUILT-IN TIME CODE GENERATOR

SMPTE/EBU time code is automatically recorded on a separate time code track. Drop Frame and Non-Drop Frame modes are selectable via an internal adjustment. Hexadecimal User Bits can also be generated and recorded. Time Code can be run in either the Rec-Run or Free-Run modes, and is displayed via a 6-digit LCD indicator. The CVR-1A also provides time code in/out ports for multiple Betacam operation.

10-WATT POWER CONSUMPTION

The use of a single high speed coreless motor to drive both the drum and tape reels results in a power consumption of only 10-watts for the unit. A NP-1 rechargeable NiCad battery, installed in the battery compartment of the CVR-1A, provides power for 45 minutes of continuous operation.

BACK-SPACE EDIT

Automatic back-space editing gives sequential recording without picture break-up at transition points.

FUNCTION INDICATORS

Six red LEDs are provided to indicate status for the following conditions: RF, Servo Lock, Head Drum Humidity, Tape Tension, End-of-Tape, and Battery. The battery indicator blinks when voltage falls below 11.45 volts, then lights continuously below 11.0 volts.

AUDIO SYSTEM

The CVR-1A provides two independent 3-position selector switches for designating audio to the two audio channels. Audio inputs include the built-in microphone, an external microphone or an audio line input. Audio levels can be controlled either automatically or through use of manual level control dials for Channel 1 and 2.

An integral speaker or earphone allows audio monitoring during recording.

VTR ADAPTORS

Using the CVA-1 component adaptor, the CVR-1A can be controlled by and accept component signals from the CVC-5, CVC-3A, or CVC-30. In this configuration, the cameras must be equipped with CA-3 or CA-30L adaptors.

The CVA-1V has all the features of the CVA-1 plus the ability to accept composite video input, allowing operation with a wide variety of ENG/EFP cameras in addition to the CVC series cameras.

Betacam is a trademark of Sony Corporation.

BETACAM

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CVR-1A SPECIFICATIONS

VIDEO	*NTSC*	*PAL/SECAM*
Bandwidth: Luminance	30 Hz to 4.1 MHz +0.5/−6.0 dB	25 Hz to 4.0 MHz +0.5/−6.0 dB
Chrominance, R-Y/B-Y	30 Hz to 1.5 MHz +0.5/−3.0 dB	25 Hz to 1.5 MHz +0.5/−3.0 dB
S/N Luminance	48 dB	46 dB
S/N Chrominance, amplitude	50 dB	49 dB
phase	50 dB	49 dB
K-factor (2T pulse)	less than 3%	
Differential Gain	less than 3%	
Differential Phase	less than 3°	
Chrominance/Luminance Delay	less than 20 nsec	less than 20 nsec.
AUDIO		
Frequency Response	50 Hz to 15 kHz ± 3 dB (with standard playback machine)	
S/N	Better than 50 dB (3% distortion level, with standard playback machine)	
Distortion (1 kHz ref. level)	less than 2% (with standard playback machine)	
Wow & Flutter	less than 1.15% rms (with standard playback machine)	
SIGNAL INPUTS		
Video: Luminance	1.0V p-p, 1K ohms unbalanced	
Chrominance	R-Y/B-Y: 0.7V p-p, 1K ohms unbalanced	
Sync	5.0V p-p (TTL level)	
Audio: MIC	−60 dB, 3K ohms, balanced	
LINE	+4 dBm, 10K ohms balanced	
Time Code	0.5 to 5V p-p, 10K ohms	
SIGNAL OUTPUTS		
Audio	Speaker, Earphone: −20 dBm max. (variable) (for 8 ohm earphone)	
Time code Output, BNC	2.5 to 3.5V p-p, 10K ohms	
GENERAL		
Record Time	30 min.	34 min.
Operating Time	45 min. with NP-1 (with CVC-5 camera)	
Operating Position	Horizontal or vertical	
Tape Speed	11.86 cm/sec.	10.15 cm/sec.
PHYSICAL DIMENSIONS		
Height	221 mm, 8.7 inches	
Width	245 mm, 9.6 inches	
Depth	112 mm, 4.4 inches	
Weight	3.4 kg, 7 lb. 8 oz.	
TEMPERATURE & HUMIDITY		
Temperature, Operating	0° C to +40° C (32° F to 104° F)	
Storage	−20° C to +60° C (−4° F to 140° F)	
Humidity	less than 80% RH	
POWER INPUT		
Power Requirements	DC 12V (11.5V to 14V) Optional AC-500 power adaptor supplies AC power	
Power Consumption	10W (12V, 830 mA), 2.4W in power-save mode	
SUPPLIED ACCESSORIES		
	3 Screws 50-pin cap Shoulder strap	Battery compartment lid strap Operation/Maintenance manual

Ampex reserves the right to make product and specification changes at any time without notice.

CVC-5 SPECIFICATIONS

CAMERA	
Pick-up device	3-chip ⅔" CCD
Picture Element	510 (h) x 492 (V) NTSC; 500 (h) x 582 (v) PAL
Optical system	F1.4 prism system
Built-in filters	1:3200° K, 2:5600° K + 1/4ND, 3:5600° K, 4:5600° K + 1/16 ND
Lens mount	Special bayonet mount
Video output	1.0 V p-p, sync negative, 75 ohms 2 outputs: TEST OUT, VTR connector
Horizontal resolution	550 TV lines
Registration	0.05% all zones
Geometric distortion	less than 1%
Sensitivity	2000 lux with F5.6, 90% reflectance (NTSC) 2000 lux with F5.0, 90% reflectance (PAL)
Minimum illumination	approx. 15 lux (with fl. 4 lens +18 dB gain) (NTSC) approx. 20 lux (with fl. 4 lens +18 dB gain (PAL)
Connectors	VTR: 50-pin, TEST OUT: BNC, LENS: 12-pin
S/N Ratio	NTSC: 58 dB, PAL: 55 dB
Power requirements	DC 12V (10.5V to 17V)
Power consumption	10.5W NTSC/PAL, 12W SECAM
Operating temperature	−20° C to +45° C (−4° F to 113° F)
Storage temperature	−20° C to +50° C (−4° F to 122° F)
VIEWFINDER	
Picture tube	1.5 inch monochrome, BRIGHT control, CONTR control, TALLY switch, AUDIO control, ZEBRA on/off switch
Resolution	500 TV lines
Microphone	Sharp-directional
SUPPLIED ACCESSORIES	Extension board, tripod adaptor, Extractor, rain cover, 50-pin cap, mount cap, carrying handle
PHYSICAL DIMENSIONS	
Height	236 mm, 9.2 inches
Width	102 mm, 4 inches
Length	478 mm, 18.8 inches
Weight	approx. 3.2 kg (7 lb. 1 oz.) with viewfinder

AMPEX Ampex Corporation, Audio-Video Systems Division

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